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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,225	06/30/2000	William C. Hunt	22977	8603

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CROWE AND DUNLEVY, P.C.
20 NORTH BROADWAY
SUITE 1800
OKLAHOMA CITY, OK 73102-8273

EXAMINER

BHAT, NINA NMN

ART UNIT PAPER NUMBER

1764

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/607,225

Applicant(s)

HUNT ET AL.

Examiner

N. Bhat

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 6-11 and 16-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Labonte, Jr in combination with Mason et al.

Labonte, Jr. teaches the invention substantially as claimed. Labonte, Jr. teaches a process and apparatus for deodorizing malodorous solids, liquids, and/or gases by contacting them with a mist of an aqueous deodorizing solution consisting of an alkali metal or alkaline earth metal chloride. The process providing making a concentrated chlorine dioxide composition, specifically, the apparatus comprises a medium pressure water supply system connected to a solenoid valve through piping or tubing which carries the water to an eductor. The eductor creates a vacuum as the water flows through it. A tube or pipe with a ball check valve carries the concentrated deodorizing solution under vacuum in the eductor to the eductor through a rotameter which is

Art Unit: 1764

equipped with a check valve at its exit. The rotameter measure the flow rates of the concentrated deodorizing solution to be added to the water from the water supply system for dilution. Labonte, Jr. teaches that knowing the flow rate of the water through the eductor, one skilled in the art can determine the rotameter setting necessary to provide the desired parts per million of chlorine dioxide to the substance to be deodorized. [Note the abstract and Column 3, lines 32-67]

However, Labonte, Jr. does not specifically teach specifically using hydrologic controls responsive to predetermined fluid levels in the dilution chamber or specifically generating chlorine dioxide.

Mason et al. teach a chlorine dioxide generator which generates an aqueous solution of chlorine dioxide which is formed with a block and includes an eductor for establishing a vacuum and a reaction column for producing chlorine dioxide from precursor chemicals. The eductor has a water stream flowing there through which established a vacuum and draws the chlorine dioxide from the reaction column in to the water stream to form aqueous chlorine dioxide. The reaction column has a transition zone of increasing flow rate wherein the reactants thoroughly mix resulting in reaction and conversion into chlorine dioxide. [Note abstract] Mason teaches that when water flows through the eductor a vacuum is with accordance of the Bernoulli principle. The preferred reactants are sodium chloride entering the eductor block through valve (35b) and chlorine gas entering through valve (35a). When the water flows through the eductor (31) generates a vacuum to suck the reaction product chlorine dioxide flows into the water stream forming an aqueous solution of chlorine dioxide.

It would have been obvious from the combined teachings of Labonte and Mason et al. to provide a chemical generator having inlets for receiving multiple reactant and water streams, a dilution chamber and reaction chamber operable connected to the inlets and the dilution chamber and includes an eductor operatively connected to a water supply which creates a vacuum which will introduce the chloride dioxide generated in the reactor into the water stream providing an aqueous chlorine dioxide stream having a concentration in the range of 200 to 3300 mg/l. Although, neither Labonte or Mason specifically teach using float valves, the valves employed in combination with the eductor functions equivalently to applicant float control valves thus rendering the invention as a whole obvious to one having ordinary skill in the art at the time the invention was made.

2. Claims 6-11 and 16-22 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. Claims 6-11 and 16-22 are free of the prior art as the prior art fails to teach and or suggest a chemical generator and process of or producing chemical solution from first and second reactants comprising a first reactant inlet including a rate controlled orifice; as second reactant inlet including a rate controlled orifice; a reaction chamber with an out including a check valve, contained within the walls of the diluent chamber, operably connected to the first and second reactant inlets; a diluent inlet and a dilution chamber defined by the walls of the diluent chamber, operably connected to the reaction chamber and the diluent inlet, the hydrologic controls responsive to

Art Unit: 1764

predetermined fluid levels in the dilution chamber; a first eductor operably connected to the diluent inlet and the reaction chamber; a first float control valve operably connected in fluid communication with the first eductor; a second eductor operably connected with the dilution inlet and the reaction chamber; a second float control valve operably connected and in fluid communication with the second eductor; a third float control valve operably connected and in communication with the second float; a fourth float control valve operably connected with the third valve and a needle valve operably connected and in fluid communication with each of the first, second and third float control valves.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cowley et al. teach chlorine dioxide generator. Taylor teaches an apparatus and method for efficient generation of chlorine dioxide. Martens et al. teach a chlorine dioxide generation. Ward et al. teach a chlorine dioxide generator. Gasper et al. teach a process and apparatus for producing an aqueous solution containing chlorine dioxide and chlorine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397.

The examiner can normally be reached on Monday-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Application/Control Number: 09/607,225

Page 6

Art Unit: 1764

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5665.



N. Bhat
Primary Examiner
Art Unit 1764

September 27, 2004